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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,937	09/09/2003	Richard M. Fastow	AMD-H0636	3100

7590 07/14/2006  
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EXAMINER

MENZ, DOUGLAS M

ART UNIT	PAPER NUMBER
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2891

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/658,937

Applicant(s)

FASTOW ET AL.

Examiner

Douglas M. Menz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.  
4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 8-10 and 12-15 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings were received on 4/12/06. These drawings are acceptable.

### ***Claim Objections***

Claim 15 is objected to because of the following informalities: Claim 15 is directed to a portion of claim 1 which has been withdrawn. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-10 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Mehrad et al. (US 6765257).

Regarding claim 8, Mehrad discloses a non-volatile semiconductor memory device including an array of memory cells, said array of memory cells comprising:

source column implanted with n-type dopants (17A, Fig. 1), said source column coupled to a plurality of common source lines (horizontal source line 17, Fig. 1) that are coupled to a plurality of source regions of memory cells in said array of memory cells, said source column (17A, Fig. 1) arranged perpendicular to each of said plurality of common source lines (17, Fig. 1);

and source contact (32, Fig. 1) coupled to said source column for providing electrical coupling with said plurality of source regions, said source contact (32, Fig. 1) located along a row of drain contacts (34, Fig. 1) coupled to drain regions of a row of memory cells that are arranged perpendicular to said source column (Fig. 1 and Col. 2, lines: 19-40), and wherein said source contact (32, Fig. 1) is of different dimension as each of said row of drain contacts (row comprising multiple 34 drain contacts, Fig. 1).

Regarding claim 9, Mehrad further discloses a plurality of word lines (15, Fig. 1) coupled to control gate regions of memory cells in said array of memory cells, said plurality of word lines (15, Fig. 1) exhibiting straightness at intersections with said source column (17A, Fig. 1) adjacent to said source contact.

Regarding claim 10, Mehrad further discloses a plurality of STI regions arranged in non- intersecting columns on a silicon substrate, said plurality of STI regions isolating columns of memory cells in said array of memory cells, and isolating said source column (Col. 4, lines: 34-65).

Regarding claim 12, Mehrad further discloses wherein memory cells in said array of memory cells are arranged in a NOR configuration (Col. 1).

Regarding claim 13, Mehrad further discloses wherein at least one of said array of memory cells flash memory cell comprising: tunnel oxide layer formed on a semiconductor substrate between source and drain regions; floating gate formed on said tunnel oxide layer; multi-level insulating layer formed on said floating gate; and control gate formed on said insulating layer (Col. 4).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehrad et al. (US 6765257).

Mehrad discloses the semiconductor memory device as described in claim 8, however, Mehrad does not explicitly disclose the use of multiple source contacts for reducing resistance in the common source lines. It is well known in the art to use such a technique for reducing resistance and is therefore considered obvious.

### ***Response to Arguments***

Applicant's arguments filed 3/3/06 have been fully considered but they are not persuasive. Applicant has amended claim 8 and argues that Mehrad does not disclose that the source contact is of a different dimension than each **row** of drain contacts. Mehrad's source contact 32, Fig. 1, is clearly much smaller (*i.e. different dimension*) than the complete **row of drain contacts** (*multiple drain contacts 34, Fig. 1, comprising a row*).

Note: Applicant's amended claim language compares the dimensions of a **single source contact** to that of a **row of drain contacts**.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M. Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DM

*Doug King 7/8/06*